Child Development

Active Boys Beginning School: Behavior and Performance

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Boys are being out-performed academically by girls in school. One possible explanation is that boys' higher activity levels may cause them to spend the early grades learning how to control their behavior rather than focusing on academics. It is possible that teachers may be more punitive toward active boys in particular, and if boys are disciplined more, perhaps they are more likely to see school as a punitive place. This may make it more difficult for boys to motivate themselves and to develop competence in school.

This short-term, longitudinal study examined gender differences in activity level and teacher-reported relationship quality with more active kindergarten students. In addition, data were gathered on the amount of correction received by all students, but particularly by boys who exhibited higher activity levels. Ethnicity of teachers and students was also examined, and qualitative case studies of the most active children were developed.

Participants were 29 kindergarteners in four classrooms in an urban, low-income, ethnically diverse elementary school near Pittsburgh, Pennsylvania. Data were collected via classroom observations, teacher report measures, grades and discipline records, and through open-ended interviews with teachers and consultants.

Study results indicate that, on average, boys were significantly more active than girls in this sample. Boys received more correction from teachers than did girls. No difference was uncovered in teacher affect expressed toward boys as compared to girls, and teacher affect did not appear to differ between African American and Caucasian children. Highly active children were disciplined more harshly than less active children. Case studies indicated that protective factors may operate for some active children, preventing high-conflict teacher-child relationships. Additional second-year qualitative follow-up data on the most active children and their experiences in first grade will be presented.

Using Developmental Principles to Assist Head Start Children

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Poverty-stricken preschoolers often encounter interpersonal and cognitive challenges in early elementary school. The following research effort tested whether a remediation that had been effective for failing kindergartners also benefited preschoolers by producing measurable cognitive growth, improved preschool literacy, or improved preschool numeracy. The remediation was a synthesis of Piagetian formulations and learning set principles taken from comparative and educational psychology. It was converted into game formats to make it age-appropriate for preschoolers. The research hypothesis was that this small addition to a conventional preschool curriculum would increase cognitive growth, literacy, and numeracy.
Design: Forty multiethnic (African-American, Latino, and Mideastern) Head Start 4-year-olds were randomly assigned to receive special small group instruction 15 minutes daily. Half of the children received playful instruction aimed at increasing their knowledge of letters and letter sounds. The other children, in matched sessions, received playful instruction designed to teach the oddity principle (picking the odd object in a group) and seriation (lining up objects by size and inserting objects into such series). Children engaged one or the other type of activity 15 minutes per day for 28 weeks, while also experiencing the High/Scope curriculum and engaging in normal Head Start activities. In late May, experimentally "blind" testers administered tests of oddity and seriation of objects, the oddity scale from the Otis-Lennon School Ability Test (O-LSAT) (Otis & Lennon,1997), and the Letter- Word and Quantitative scales from the Woodcock-Johnson III (McGrew & Woodcock, 2001). *Results:* Children who played cognitive games became better at seriation than the control group. They were also superior at applying the oddity concept to everyday objects and on the O-LSAT oddity scale. Hence, they generalized their thinking to new objects and also to workbook-like formats. They also scored best on the Quantitative scale. This scale does not measure anything directly taught. Hence, learning the oddity principle and seriation appears to have supported the development of numeracy. The difference between these children and the control children on the Letter-Word scale was not significant, so the letters and letter sounds instruction and the oddity and seriation instruction appear to have offset each other in this arena.

In summary, adding brief daily sessions of play guided by empirical research and developmental theory to a conventional preschool curriculum accelerated two aspects of cognitive growth and promoted the development of numeracy. Since the play is easy for adults to guide, and is relatively brief, it can be easily incorporated into existing programs and curricula without extensive training of staff or the acquisition of costly materials.

Continuity of Care for Infants and Toddlers

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According to a national survey, most children in center-based childcare have a series of different caregivers during the first three years of life (Cryer, Hurwitz, & Wolery, 2000). The lack of continuity of care for infants and toddlers, although common, contrasts with what is considered best practice in the early childhood field (e.g., NAEYC, 1991). Although accepted as best practice, continuity of care has limited research support concerning longer-term effects. The present longitudinal, prospective, randomized investigation examined the effects of having the same caregivers during the first three years of life vs. having different caregivers during each of the first three years.

Participants included five NAEYC-accredited, high-quality, full-time childcare centers; 76 classrooms; 102 classroom teachers and assistants; and 108 children and their families. Experimental condition was determined by first assigning children to teachers and then randomly assigning teachers to condition (continuity vs. non-continuity). Information was collected annually on children's development (Battelle Developmental Inventory (Newborg, Stock, Wnek, Guidubaldi, & Svinicki, 1984)), language (Preschool Language Scale-3 (Zimmerman, Steiner, & Pond, 1992)), teacher relationships (Attachment Q-Set (Waters & Deanne, 1985)), and social behavior and distress with observational codes developed by the study investigators. Data were also collected annually on potential moderators, including classroom quality (Infant/Toddler Environment Rating Scale (Harms, Cryer, & Clifford, 1990) and Caregiver Interaction Scale (Arnett, 1989)), parent-teacher relationships (Parent-Caregiver Interaction Scale (Elicker, Noppe, & Noppe, 1996)), and temperament (Infant Behavior Questionnaire (Rothbart, 1981)).

We found no effects of continuity on children's general development or language abilities. We therefore analyzed these variables as potential moderators of continuity on distress and negative behavior. We did find an effect of continuity on teacher-child relationships, with continuity children tending to use the teacher as a secure base more than non-continuity children ($p < .05$).

The two groups did not differ in proportion of children showing distress during transitions or in changes over time in those proportions. However, continuity children showed more negative behavior in infant classrooms, and subsequently showed a declining likelihood of negative behavior in the two-year-old classrooms during transition and post-transition periods. In contrast, non-continuity children showed a slightly increasing likelihood of negative behavior.

There are several implications based on these findings. First, because there were few differences in outcomes of children in the two groups, the early childhood field should not be overly concerned about whether continuity of care is used. Continuity is difficult to implement and maintain and therefore its benefits are not likely to match costs. Second, the importance of high quality care for young children continues to be well-supported by this study. The field should continue efforts to understand how structural factors interrelate and can be manipulated to produce high quality programs. Finally, the field should not emphasize one aspect of quality as being far more important than others. Children need protection, appropriate learning opportunities across content areas, and opportunities to form positive relationships with peers

and adults. There are many possibilities for creating these conditions, with research required to guide how efforts and resources are best expended.

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Temperament, Approaches to Learning and Children's School Readiness

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There is considerable evidence that temperament affects children's school experiences, including their adjustment to school and academic achievement (Coplan, Barber & Lagace-Sequin, 1999; Keogh, 2004). However less is known about the processes through which temperament affects school outcomes, especially in preschool populations. One hypothesis is that temperament influences children's school readiness through its effect on children's approaches to learning. Approaches to learning refers the behaviors that children display when engaged in new or challenging learning tasks and includes components of curiosity and initiative, engagement and persistence, cognitive inhibition, and problem solving flexibility (Kagan, Moore, & Bredekamp, 1995; McDermott, 1999; Meisels, Jablon, Marsden, Dichtmiller, & Dorfman, 1994). The purpose of the current study is to test this mediation hypothesis.

Data were collected on 274 preschool age children attending Head Start. Teachers assessed children's temperament using the Preschool Temperament Classification System (PTCS), which was developed by the authors of the current study. The PTCS is a typological approach that identifies children's temperament as undercontrolled, resilient or overcontrolled. Teacher reports of children's approaches to learning were also collected using the approaches to learning subscale of the Galileo System for the Electronic Management of Learning (Bergan, Bergan, Rattee, & Feld, 2002). Lastly, children were individually and directly assessed on their school readiness using the school readiness composite of the Bracken Basic Concepts-Scale Revised (BBCS-R; Bracken, 1998).

Preliminary analyses were conducted and revealed significant age and gender differences in the outcome variables, which were controlled for in subsequent regression analyses. Also the three conditions necessary to test for mediation were met: 1) temperament (IV) predicted approaches to learning (mediator); 2) temperament (IV) predicted school readiness (DV); and 3) approaches to learning (mediator) predicted school readiness (DV). The final regression analysis and Sobel tests revealed that approaches to learning partially mediated the relation between temperament and school readiness.

In the current study, the association between temperament and school readiness was partially mediated by approaches to learning. Compared to their resilient peers, children with undercontrolled and overcontrolled temperament styles had lower approaches to learning scores which in turn caused them to score lower on school readiness. These findings highlight the need to identify and intervene with children who have less adaptive temperament styles. This is especially important for low income, minority children who are already at-risk for poor achievement. One strategy for increasing under- and over- controlled children's school readiness is by improving their approaches to learning skills.

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